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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,532

12/11/2003

Julian Edward Sale

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9057

29933 7590 05/14/2007  
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EXAMINER

SULLIVAN, DANIEL M

ART UNIT

PAPER NUMBER

1636

MAIL DATE

DELIVERY MODE

05/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/733,532	<b>Applicant(s)</b> SALE ET AL.	
	<b>Examiner</b> Daniel M. Sullivan	<b>Art Unit</b> 1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2006 and 14 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15-31 is/are pending in the application.
- 4a) Of the above claim(s) 17-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 December 2006 has been entered.

This Office Action is a reply to the Papers filed 18 December 2006 and 14 March 2007 in response to the Final Office Action mailed 8 October 2006. Claims 17-31 were withdrawn from consideration and claims 1-12 and 14-16 were considered in the 8 October Office Action. Claim 14 was cancelled and claims 1, 15 and 16 were amended in the 18 December Paper. Claims 1-12 and 15-31 are pending and claims 1-12, 15 and 16 are under consideration.

### ***Response to Amendment and Arguments***

#### **Claim Rejections - 35 USC § 112**

Rejection of claims 1-12, 15 and 16 under 35 U.S.C. 112, first paragraph, as lacking enablement for the full scope of the claimed invention is withdrawn in view of the amendments and arguments presented in the 18 December Paper.

#### **Double Patenting**

Rejection of claims 1-12 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 36, 37, 39 and 40 of copending Application No.

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10/146,505 (now U.S. Patent No. 7,122,339) in view of Monteiro *et al.* (2000) *Teratogen.*

*Carcinogen. Mutagen.* 20:357-386 is withdrawn in view of the amendment of claim 1 to include the limitations of claim 14.

### Claim Rejections - 35 USC § 102

Rejection of claims 1-12 under 35 U.S.C. 102(b) as being anticipated by Sale *et al.* (April 2000) WO 00/22111 (made of record in the IDS filed 11 December 2003) is **withdrawn** in view of the claim amendments.

### *New Grounds*

#### Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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Claims 1-12, 15 and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 4, 6 and 7 of U.S. Patent No. 7,122,339 in view of Monteiro *et al.* (2000) *Teratogen. Carcinogen. Mutagen.* 20:357-386. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant method is an obvious variation of the claims in the '505 application. An obviousness-type double patenting rejection is appropriate where the conflicting claims are not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would be obvious over, the reference claim(s).

Claim 1 of the '339 patent is directed to a method for preparing a B cell line exhibiting directed constitutive hypermutation of a target nucleic acid region comprising screening B cell lines for ongoing target sequence diversification, wherein said screening comprises determining the mutation rate of the target nucleic acid region relative to the mutation rate of a non-target nucleic acid region, and selecting a B cell line in which the mutation rate of the target nucleic acid region in the selected B cell line exceeds that of the non-target nucleic acid region in the selected B cell line by a factor of 100 or more, whereby a B cell line exhibiting directed constitutive hypermutation of the target nucleic acid region is prepared.

The instant claims 1-3, 6, 8 and 13 are generic to all that is recited in claim 1 of the '505 application except for the limitation "wherein the rate of mutation in the cell is modulated by genetic manipulation of one or more DNA repair genes". However, Monteiro *et al.* teaches isolation of cells having desired mutations is enhanced by exposing cells to mutagenic agents. Specifically, Monteiro *et al.* teaches that treatment of cells with mutagenic agents provided a significant increase in the number of cells isolated which exhibited loss of HLA-A2 (see

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especially the section entitled "Mutation induction experiments" bridging pages 371-372 and Table IV). It would have been obvious to one of ordinary skill in the art seeking to practice the invention claimed in the '339 patent to modify the method to include treating cells with a mutagenic agent—thereby manipulating the genes of the population—according to the limitations of the instant claims. One would be motivated to modify the method claimed in the '339 patent according to the teachings of Monteiro *et al.* in view of the nature of the problem solved by the claims of the '339 patent, which is to isolate mutants having a desired property, and in the in order to obtain the expected benefit of a higher mutation rate and therefore an increased incidence of the desired mutation in the cell population. Furthermore, the '339 patent teaches, "Preferred cells according to the invention may be subject to gene manipulation, such as gene deletion, conversion or insertion, in order to increase the rate of somatic hypermutation observed therein. For example, the cells according to the invention may lack one or more copies of a RAD51 paralogue." (Paragraph bridging columns 4-5.) Therefore, one would be motivated to modify the claims of the '339 patent to include manipulation of a DNA repair gene such as a RAD51 gene in viewed of the disclosure in the portion of the specification that supports the claims that such manipulated cells are preferred embodiments of the invention. Thus, the instant claims 1-3, 6, 8 and 13 and the limitations of the instant claims 15 and 16, which recite tat the manipulated genes are Rad51 genes, as a whole, would have been obvious over claim 1 of the '339 patent in view of the teachings of Monteiro *et al.*

In addition, the limitations of the instant claims 4, 5 and 10 are generic to the limitations recited in claim 7 of the '339 patent, the limitations of the instant claim 7 are recited in claim 3 of the '339 patent, the limitations of the instant claim 9 are recited in claim 4 of the '339 patent,

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and the limitations of the instant claim 11 are recited in claim 6 of the '339 patent. Thus, the instant claims are not patentably distinct from the claims of the '339 patent in view of the teachings of Monteiro *et al.* for the reasons set forth herein above regarding the generic claim 1.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel M. Sullivan whose telephone number is 571-272-0779. The examiner can normally be reached on Monday through Friday 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach, Ph.D. can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) (<http://pair-direct.uspto.gov>) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



Daniel M. Sullivan, Ph.D.  
Primary Examiner  
Art Unit 1636